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Jong-Chul Bang

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EXAMINER

HECKERT, JASON MARK

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/2/10 have been fully considered but they are not persuasive. Applicant argues that Young, Inui, and Ravitts do not teach an outer and inner wall. While the examiner agrees that they do not teach two physically discrete walls, Ravitts does teach a wall that has an interior and exterior surface that can be construed as inner and outer walls. As defined by the claim, the inner wall must extend downward from the bottom surface of the upper plate and be within the outer wall by being a predetermined distance away. The interior wall of Ravitts does extend downward from the bottom surface of an upper plate and is separated from the outer wall by the depth of the wall. Considering the broadest reasonable interpretation of the art, such an interpretation is valid.
2. In order to differentiate from such an interpretation, language should be included pointing to a void space or gap between the inner wall and outer wall. Such an amendment would overcome the prior art rejections of record.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 21, 23-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Young, Jr (Young) in view of Inui and further in view of Ravitts. Young discloses a

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washing machine 30 comprising a sump housing located in the bottom of the tub (figure 1), and a wash motor with a shaft 148. The pump's impeller (either 128 or 140) is encased and attached to the motor shaft 148. Young discloses various sealing means, including a body portion 196 that includes a connecting portion to sealably attach the motor drive shaft 148 to the drain impeller shaft 192 and seals an opening in the lower pump housing 56 through which the motor shaft penetrates. While Young does not disclose the exact mechanism for sealing the lower portion of the housing, he does advocate the use of a seal. Inui discloses a leakage preventing structure of a dishwasher comprising a wash motor 42 located in a sump and a sealing portion 46 sealing a space between the motor shaft and the sump by coupling (figure 2 and 3). The motor shaft is inserted through the sealing means. The sump has a case for the sealing means (figure 3). The sealing means is an oil seal of predetermined size. It would have been obvious at the time of invention to modify Young and include the sealing means of Inui in order to prevent water leakage.

5. Young discloses a motor shaft with an attached impeller and advocates sealing means. Inui teaches an oil seal for the motor shaft in a dish washing apparatus, but does not teach an aircap. Ravitts teaches using a sealing means for a submersible pump, in which the sealing means comprise a cap that is filled with air (figure 1). The cap has the structure of the claimed "aircap", in that it houses air in the region 60 which in turn controls the water level within the sealing case. Item 54 reads on the shaft-through sleeve and upper plate. The cap has an inner and outer wall (see figure 1). The walls are separated by the depth of the wall which is a predetermined distance. It would

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have been obvious at the time of invention to modify Young in view of Inui and further include an aircap, as taught by Ravitts, in order to provide an air seal to prevent leaking down the motor shaft. In regards to claim 24, there is plenty of space located in the air cap of Ravitts to house the sealing means of Inui. Such a modification would provide the obvious benefit of better sealing means and backup sealing means.

6. Claim 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Inui in view of Ravitts and further in view of Yasuda. Young and Inui do not disclose lips which firmly pressed to the shaft. Yasuda disclose a shaft seal 14 with multiple lips (41 and 45) that firmly press to the shaft. While Yasuda's seal is used in a different apparatus, the fundamental teaching is believed to be obvious in the art of sealing means and would directly apply to the teachings of Inui. It would have been obvious at the time of invention to modify Young in view of Inui and Ravitts, and further include multiple seal lips, as taught by Yasuda, to prevent leakage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON HECKERT whose telephone number is (571)272-2702. The examiner can normally be reached on Mon. to Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

JMH